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JOINT FORCE COMMANDER 2010; CHESS MASTER, COACH OR CHEERLEADER ?

by

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A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Joint Military Operations Department.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

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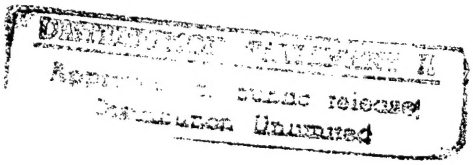

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15. Abstract: Joint Vision 2010 provides a vision of the future joint battlefield. This vision depends heavily on an enabling capability called Information Superiority. Information Superiority is expected to provide unprecedented knowledge of the three-dimensional battlefield simultaneously across the levels of command from Tactical to the National-Strategic. It is the purpose of this research to determine how Information Superiority may influence a Joint Force Commander's (JFC) ability to effectively direct lower level tactical actions. Limitations of Information Superiority and examples of how historical commanders utilized significant advances in command and control will be used as determinants. Metaphorically, Chess Master, Coach and Cheerleader are used to visualize the degree of influence a future JFC might choose to exert. The research supports that in a crisis confined to a small area, preceded by time to gather and focus a large number of Intelligence, Surveillance and Reconnaissance (ISR) assets on a fairly static enemy, Information Superiority should give the the JFC a picture that will approach the true situation on the battlefield. In this case the JFC may effectively control his forces as a Chess Master would pieces on a chess board. However, when allocated less than the optimum number of ISR platforms, against a dynamic enemy dispersed over a large theater of operations, the JFC's picture will be somewhat less than the true situation on the battlefield. In this case, his role must shift more toward that of a coach, where he provides the necessary intent and supervision while allowing his players to exercise their own skill, initiative and innovation. The role of a Cheerleader and motivator is most important regardless of how the JFC chooses to control his forces, and Information Superiority will support this contribution.

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ABSTRACT

Joint Vision 2010 provides a vision of the future joint battlefield. This vision depends heavily on an enabling capability called Information Superiority. Information Superiority is expected to provide unprecedented knowledge of the three-dimensional battlefield simultaneously across the levels of command from Tactical to the National-Strategic. It is the purpose of this research to determine how Information Superiority may influence a Joint Force Commander's (JFC) ability to effectively direct lower level tactical actions. Limitations of Information Superiority and examples of how historical commanders utilized significant advances in command and control will be used as determinants. Metaphorically, Chess Master, Coach and Cheerleader are used to visualize the degree of influence a future JFC might choose to exert. The research supports that in a crisis confined to a small area, preceded by time to gather and focus a large number of Intelligence, Surveillance and Reconnaissance (ISR) assets on a fairly static enemy, Information Superiority should give the the JFC a picture that will approach the true situation on the battlefield. In this case the JFC may effectively control his forces as a Chess Master would pieces on a chess board. However, when allocated less than the optimum number of ISR platforms, against a dynamic enemy dispersed over a large theater of operations, the JFC's picture will be somewhat less than the true situation on the battlefield. In this case, his role must shift more toward that of a coach, where he provides the necessary intent and supervision while allowing his players to exercise their own skill, initiative and innovation. The role of a Cheerleader and motivator is most important regardless of how the JFC chooses to control his forces, and Information Superiority will support this contribution.

JOINT FORCE COMMANDER IN THE YEAR 2010; CHESS MASTER, COACH OR CHEERLEADER ?

INTRODUCTION

Joint Vision 2010 provides a vision of the future joint battlefield. This vision of the future develops four operational concepts of dominant maneuver, precision engagement, full dimensional protection and focused logistics. These four concepts depend heavily on leveraging emerging technology to achieve an enabling capability called Information Superiority. The Advanced Battlespace Information System (ABIS) is the concept of a Task Force chartered by the Office of the Secretary of Defense and the Joint Staff to explore how these emerging technologies would support Joint Vision 2010.[1] ABIS is used in this research as an indicator of the direction in which Information Superiority is headed and as a general frame of reference but not as a specific standard to apply. ABIS as an enabling capability is expected to provide unprecedented knowledge of the three-dimensional battlefield simultaneously to all levels of command from Tactical to the National-Strategic.[2] Given access to this picture of the battlefield and the connectivity to friendly forces inherent in Information Superiority, it is the purpose of this research to determine to what degree Information Superiority will enhance the Command and Control (C2) process and allow or perhaps encourage a Joint Force Commander (JFC) to participate in the lower level tactical decisions. Since the JFC's view of the battlefield will be essentially the same as that of his subordinate commanders, will he choose to play his forces as a Chess Master would

pieces on a chess board? Rather, the JFC may see himself more as a Coach, who while exerting substantial influence, relies on the individual talents of his players to execute the mission. Lastly, will the JFC become so overwhelmed by the vast amounts of information available that he finds himself playing the part of the Cheerleader, giving general direction, support and encouragement but wide latitude to his players in the execution of their mission? To explore these possibilities, the research will focus on the following areas:

- What is Information Superiority and what are its limitations?
- How might Information Superiority affect a JFC's command and control process?
- How did Commanders of the past handle similar significant advances in the capabilities of command and control?

INFORMATION SUPERIORITY

> *Success in future combat relies heavily upon our ability to rapidly acquire, disseminate and utilize knowledge of the three-dimensional battlespace at all echelons by means of a global information system with assured services. . . . The potential of an integrated information architecture is so great that many speak of it as the basis for a revolution in military affairs.*
>
> Executive Summary, ABIS Task Force Report

Joint Vision 2010 defines Information Superiority as "The capability to collect, process, and disseminate an uninterrupted flow of information while exploiting or denying an adversary's ability to do the same". ABIS Task Force took this definition and looked at emerging technologies to determine how they could be used to provide this capability.[3]

In the broad perspective, ABIS envisions achieving Information Superiority by linking all sensors, weapon platforms and command and control capabilities through a very large background grid or distributed information system. Also tied into this grid system would be a reachback capability to access large data bases for support of intelligence, logistics, etc. ABIS would not just simply redistribute collected data, but would manage and manipulate that *data* through processing and fusion into a *knowledge* of friendly and enemy forces. The emerging technology that ABIS seeks to capitalize upon is the tremendous evolution of computer processing power and the innovation of knowledge based networks or systems.[4]

What is important to note is not only how ABIS proposes to achieve Information Superiority, but how it does not. Information Superiority is not achieved through a giant satellite hovering overhead with unlimited sensors focused on each square foot of the battlefield. It is not a new means of *acquiring* more information, but rather a new means of *sharing* information. ABIS proposes to achieve Information Superiority through a very robust method of distributing to everyone what each individual "sees" and doing it in a form or medium that is useful to each participant.

COMMAND AND CONTROL

To properly understand how an Operational Commander utilizes his subordinate forces to effectively execute his intent, some basic definitions are required. The first is for *command and control.* According to Department of Defense Dictionary of Military

and Associated Terms (Joint Pub 1-02) command and control is:

> The exercise of authority and direction by a properly designated commander over the assigned forces in the accomplishment of the mission. Command and control functions are performed through an arrangement of personnel, equipment, communications, facilities, and procedures which are employed by a commander in the planning, directing, coordinating and controlling forces and operations in the accomplishment of the mission.

This definition describes a *process* of "command and control" supported by a *system* of "command, control, communications, computers and intelligence" (C4I).[5] In this research, ABIS is used as this *system* of C4I utilized to support the C2 *process*.

This definition of the process of C2 however does not clearly distinguish between the individual words of *command* or of *control*. One definition is that *command* is the function to be performed and *control* is the feedback mechanism used to evaluate the current situation, status and progress in order to make necessary corrections.[6] Also part of the *control* side of the equation is the latitude a superior commander gives the junior commander in performing the assigned *command* function. Very specific task oriented orders, generally stated mission orders, restraints and rules of engagement, all would be means of control under this definition. Utilizing this definition then, the purpose of the command and control process can be described as controlling the changes of the environment the commander and his forces are imbedded in.[7] A useful illustrative statement can now be made that the purpose of Operational command and control is to insure the Tactical commanders at the scene of action take the actions the Operational commander would want them to take under whatever circumstances they confront in a specific situation or environment.[8]

INFORMATION SUPERIORITY IN SUPPORT OF COMMAND AND CONTROL

Therefore I say: Know your enemy and yourself; in a hundred battles you will never peril.
When you are ignorant of the enemy but know yourself, your chances of winning or losing are equal.
If ignorant of both your enemy and yourself, you are certain in every battle to be in peril.

Sun Tzu, The Art of War

Armed with Information Superiority, a JFC may now see the same picture as his tactical forces. Would not the JFC now be best suited to coordinate these tactical forces in the execution of their mission to accomplish "his" intent?

To evaluate the ability of Information Superiority to support the JFC in his ability to more closely control his tactical forces, it is useful to look at the two distinct sides of Information Superiority. These two sides are its capability to provide a comparable level of knowledge of both friendly and enemy forces to the Operational commander, as it is able to provide to the Tactical commander.

Knowledge of Oneself

With the advent of the Global Positioning System very few U.S. tactical forces are lacking for extremely precise time and position information on themselves. Most fighting units in the U.S. armed forces also have access to some form of a basic tactical data link system. Also, a wearable personal communication system for the individual soldier designed for identification and situational awareness will be available in the very

near future.[9] Since the ABIS concept of Information Superiority is an underlying architecture to collect, integrate, and redistribute information from existing systems, this seems like a reasonably low risk endeavor.[10] There are existing systems such as Joint Tactical Information Systems (JTIDS) and Tactical Digital Information Link-Type J (Tadil-J) that do this already, although significantly smaller in scope.[11]

Having a single system managing all the component systems is not without its risks. The current patchwork of incompatible and diverse computer network systems within the U.S. military have provided a measure of protection from unauthorized intrusion and manipulation, according to a November 1996 report of the Defense Science Board.[12] That same report stated that the U.S. military's growing dependency on a closely linked network of computers is a potential "recipe for a national security disaster".

The positive aspects of such a system for the JFC are readily obvious. A common knowledgeable picture of friendly forces would contribute to the ability to synchronize and mass forces which are widely dispersed throughout the entire theater of operations. An added benefit would be the simplification of rules of engagement (ROE) and reduced instances of fratricide and false alerts. Currently procedures for the satisfaction of ROE and deconfliction between friendly forces consumes a great deal of the operational level planning and command and control.

Knowledge of the Enemy

Providing a level of knowledge of the enemy to the operational commander that is the same as that available to the tactical forces will require a considerable effort on the part of the architects of Information Superiority. The source of this knowledge will begin with the theater and national Intelligence, Surveillance and Reconnaissance (ISR) platforms such as AWACS, Rivet Joint, Joint STARS, unmanned aerial vehicles and satellites.[13] Contributing as well, will be the sensors of the multitude of tactical forces once they are within range of the enemy.

Recall that the ABIS concept of Information Superiority relies on some type of platform to initially "see" the enemy before that observation can be processed and fused with other information into knowledge of the enemy. This method of achieving Information Superiority is constrained by the following three limitations:

- Density of Sensors
- Collection Time
- Dynamics of Enemy Forces

Density of Sensors

Density of sensors simple means how many sensors are available to the JFC and how focused are they on his enemy. Currently, the number of these ISR platforms

available to a JFC would be determined at the national-strategic level. Unfortunately the total numbers for most of these specialized platforms like the U-2, EP-3, and RC-135 is fairly small, with no solid follow-on program to significantly increase their numbers. These platforms also perform national-strategic missions that may take away from their availability to the JFC.[14] Another concern to the JFC in the availability of these ISR assets is whether his is the only crisis occurring at the moment. With the growing number of international crisis, the demand for these type platforms is kept very high.[15]

If the JFC is fortunate enough to have access to a large number of the national and theater ISR platforms and his enemy is confined to a small area, then the overall higher density of sensors will contribute to better knowledge of the enemy. Conversely, with only a few sensors looking over a large area, the knowledge of the enemy will be somewhat less.

Collection Time

With all other considerations remaining constant, the greater the collection time, the more information accumulated on the enemy. As well, this time is available to process and fuse that information into detailed knowledge. An example would be the months the Iraqis allowed the coalition forces to build a very detailed picture of their forces prior to the commencement of hostilities in the Gulf War. Unfortunately this collection time is usually not at the discretion of the JFC who typically must react to a developing crisis. However, one very important aspect influencing the impact of time that the JFC does have control over is planning. The more thorough the crisis planning

the greater it will help ameliorate the lack of collection time. Planning contributes in that it helps focus assets and effort in the short amount of time available.[16] While all our opponents won't be as cooperative as the Iraqis were prior to the Gulf War, prior planning in any measure at all will significantly enhance the rapid building of a knowledgeable picture of the true situation.

Dynamics of Enemy Forces

Dynamics of enemy forces are determined by his theater mobility, operational deception, information warfare and his ability to successful synchronize his forces at the operational level. Enemy theater mobility and synchronization makes it more difficult to gain and maintain a knowledgeable picture because it places a greater requirement on friendly ISR capability to observe more enemy events or movements in a given time period. Given a limited number of friendly ISR assets, operational deception would complicate the task of correctly focusing these ISR assets on the enemy forces of greatest threat.

Information warfare should be an expected response by any potential adversary. As stated in Joint Vision 2010, it can be anticipated that the U.S. will rely heavily on Information Superiority to achieve a significant force multiplication, accordingly, the U.S. must expect an adversary to react to counter that dependency. Any potential adversary will aggressively respond to our attempt to achieve Information Superiority just as he would act to prevent us from achieving air superiority, or any other advantage. The

National Security Agency has reported that over 120 countries currently have or are developing capabilities to attack U.S. military computer systems.[17]

Realistic Expectations

In a crisis that is confined to a small area, preceded by time to gather and focus a large number of ISR assets on an enemy that is fairly static in nature, the JFC's picture will more closely approach the true situation of the battlefield. However, against a very dynamic enemy dispersed over a large theater of operations and allocated less than the optimum number of ISR platforms, the JFC's picture will be somewhat less than the true situation of the battlefield.

HISTORICAL PERSPECTIVE

> *" 'Do you know what is shown on board the Commander-in Chief ? No. 39! To leave off action! Leave off action? Now, damn me if I do. You know Foley,' turning to the captain, 'I have only one eye-I have a right to be blind sometimes.' Putting the glass to his blind eye, he exclaimed, 'I really do not see the signal! Damn the signal! Keep mine for closer battle flying! That's the way I answer such signals! Nail mine to the mast! ' "*
>
> Vice-Admiral Nelson, Battle off Copenhagen, 1801

Within the technical limitations of information superiority, the individual JFC will ultimately decide the role he wishes to play in the command and control of his tactical forces. Other than one-eyed Admirals, there are a number of other considerations the JFC must weigh in this decision to closely control his forces.

For a historical perspective on how future leadership may handle this decision,

we will examine commanders who for the first time had the means to communicate with their forces while concurrently able to observe most if not all of the battlefield. Although the level of war may be different in our examples, they are not unlike the situation a JFC may soon find himself in with Information Superiority, that of being able to "see" the entire theater while able to simultaneously communicate with and control all his forces.

In the late 1780's, a new method of communication that facilitated line of sight signaling was the invention of the optical telegraph or semaphore. It was invented almost simultaneously by Claude Chappe in France and by George Murray in England.[18]

In the Royal Navy, use of these signal flags contributed to an evolution in naval fleet engagements under Admiral Nelson. In a period of only a two decades, fleet on fleet battles matured from large engagements of individual effort with little coordination or mutual support to well planned, mutually supporting engagements utilizing signals to coordinate the entire fleet.[19]

Prior to the 1790's, the British fleet operated with a few basic formations and instructions which kept fleet tactics rigid and left little room for innovation. This was due in large measure to the very limited means of communications available, horns, bells and less than ten different signal flags. Then in 1790, the Royal Navy adopted this new method of semaphore. This innovation allowed signal flags to be hoisted in different combinations to communicate 9,999 different messages.[20]

While this doesn't seem breathtaking today, it was a watershed in fleet communications in Admiral Nelson's time. With this new capability, Nelson was quick to develop fleet tactics that took advantage of locally massed firepower and mutually

supporting, maneuverable formations. This was a radical departure from the old way of fleet engagements where two opposing lines of ships came together on parallel courses and "slugged it out". These new tactics enabled by a new means of command and control was credited with contributing to Nelson's major fleet victories.[21]

Nelson, besides being an innovator in fleet operations, was also known for his meticulous plans and his ability to inspire his officers and men. He would gather his officers before battle to ensure they understood his intentions for the battle as a whole and how he wanted to exploit any opportunities afforded by the enemy. In this way, the commands to the fleet during battle had been thoroughly discussed prior, greatly aiding their execution. While at times his plans were thought too hazardous by his captains, Nelson's ability to inspire and embolden them, ensured they were eagerly carried out. [22] Nelson also used this new system to inspire his entire fleet. In closing with the French Fleet just prior to the Battle of Trafalgar, Admiral Nelson instructed his signal lieutenant to hoist the immortal signal "England expects that every man will do his duty." As the ships individually decoded the signal, a rousing cheer passed through the entire fleet.[23]

Unlike Admiral Nelson, the possibilities offered by this new method of communications seemed lost on Napoleon. In his great battles, Napoleon continued to use runners with hand written messages. If a certain part of a battle was seen by him as faltering, he would at times ride to the local commander and issue orders himself. Also unlike Nelson, he was less interested in allowing subordinates freedom of action as he was in ensuring they closely carried out his very detailed orders. Napoleon's orders to his Corps Commanders were very specific and task oriented. An order to Murat during the encirclement of Ulm, contained instructions like: ensure your Generals

inspect the arms and ammunition...recall men on baggage escort...clear the roads of baggage and vehicles.[24]

In the end, Napoleon's final defeat at Waterloo was attributed both to the failure of his subordinate commanders' ability to function independently, and to his own mistakes made while trying to personally manage several local battles simultaneously. While it has been observed that Napoleon was not well served by his Marshals in his final campaign, it was in large part due to his own failure in preparing them for independent action.[25]

Like Nelson however, Napoleon was a master at motivating and inspiring his troops. He expressed it in his own words in dictation during his exile on St. Helena. "When I used to say, as I rode through the ranks amidst fire, 'Unfurl those colors, the moment has at last arrived!' , my gesture and manner filled the French soldiers with ardor and impatience".[26] Napoleon recognized the impact personal attention had on the troops and spent a great deal of time with them during bivouac.[27]

CONCLUSIONS

Chess Master, Coach or Cheerleader ?

Do the technological possibilities and limitations as well as the historical perspective on Information Superiority's effect on command and control offer any insight for the future role of the JFC? The following conclusions are offered as possible roles for the JFC under a range of situations, remembering however, that the role of the JFC in the future will also greatly depend on the personality of the individual involved.

Chess Master

Information superiority in the year 2010 may very well support a JFC's ability to very closely control his total force. If he has sufficient knowledge of the entire battlefield, there may be times when he is in the best position to make employment decisions historically delegated to his subordinate commanders. Situations favoring this type of close control would be limited operations of modest scale, confined to a small geographic area and short in duration. Concerns over escalation, collateral damage or political sensitivities of the operation may dictate close JFC control. Operations *El Dorado Canyon* (Lybia, 1986) and *Praying Mantis* (Iran, 1988) are representative of this type of limited operation.

The concerns for the JFC over exercising this close control would be the stifling of initiative on the part of the subordinate commanders or a one-eyed admiral deciding that the JFC's picture is not the same as his own. If there is a conflict between the battlefield pictures across the levels of command, the commander fighting the battle at hand must have some plan or superiors intent to fall back on.

Coach

This is most likely the position a future JFC will find himself in. He would be responsible for providing his team with a good understanding of how he intends to accomplish his mission. Before the beginning of hostilities, he should conduct detailed

discussions of initial plans, expected enemy actions and reactions and finally instill in his players a rousing fighting spirit. Although this pre-hostility planning and pep-rally, would best be conducted in person with his subordinate commanders and forces, the inherent connectivity of Information Superiority could ensure that the entire team would be included to some degree. The JFC could then closely monitor the interaction of friendly and enemy forces, to ensure the desired synchronization and coordination is taking place with the intended results. This supervision would allow the JFC to provide the necessary supervision while still allowing his players to exercise their own skill, initiative and innovation. Information superiority should also allow the JFC to occasionally call an "audible" to take advantage of a time critical enemy vulnerability while denying the enemy the same capability.

Cheerleader

In a situation where either the technical or resource limitations of Information Superiority were reached, a JFC could very well find himself in this role. This might occur during a crisis of global scope, or possibly if he were involved in one of many lesser conflicts. As envisioned, Information Superiority should still provide a knowledgeable picture of friendly forces and connectivity between those forces in this situation. As seen in the historical examples, there is still great benefit in just having good communication between the JFC and his subordinate commanders and forces. A premium would now be placed on commanders intent, planning, coordination and self

synchronization of the forces once hostilities began. All this could still contribute greatly to the overall mission, even if a full enemy picture was unavailable to the JFC. Just as in the other roles, motivation and inspiration of his forces would be a very important function of the JFC supported by Information Superiority.

NOTES

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2. Ibid.

3. Ibid.

4. Ibid., ES-3.

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